

REMARKS

Reconsideration of all grounds of rejection and rejection, and allowance of this application are respectfully requested in light of the above-amendments and the following remarks.

Applicants respectfully submit that they requested that claim 12 be cancelled without prejudice or disclaimer in the Response to the Restriction Requirement filed May 23, 2002. According, claim12 should be noted as cancelled, and not merely withdrawn from consideration.

Applicants have overcome the objection to the drawing by submitted herewith a revised Fig.5 showing the properly identified transponder.

In response to Examiner's requirement that the security paper, which is recited by claim 11 and disclosed in the specification at least at page 7, lines 14-23, be shown in the drawings, Applicants have added new Figs. 6A and 6B. Applicants affirm that no new matter has been added, as these figures simply show what is disclosed in the cited page of the specification.

Applicant has updated the specification to reflect the new drawings.

Summary of the Rejections:

- (1) Claims 1-11 stand rejected under 35 U.S.C. §112, second paragraph.
- (2) Claims 1-11 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Chang et al. (U.S. 6,159,842, hereafter "Chang").

Applicant's Traversal:**35 U.S.C. §112:**

With regard to the rejection under 35 U.S.C. §112, second paragraph, Applicants amended claims 1, 3 and 8 to clarify the claimed invention. With regard to the Examiner's query regarding the programmed and non-programmed state, claim 1 has been amended to recite, *inter alia*, that the "organic material is programmed by heating the memory element to a transition temperature that reduces conduction through predetermined portions thereof." Applicant respectfully submits that the heating creates a structural change in the conductivity of the organic material.

With regard to claim 3, which depends directly from claim 1, Applicants recite a conductor track (element 23, shown in Fig. 1) separate from the bridge 27, and perpendicularly arranged, wherein a portion overlaps to dissipate heat away from the bridge.

In contrast, claim 8, which depends from claim 7 (that depends from claim 2) the Applicants recite that the bridge "is adapted to function as the conductor track" this being a different embodiment of the invention than recited in claim 3. Applicants refer to the extremely narrow bridge 27 in Fig. 2 having a width 13 smaller "than the first transistor electrode (21) of the first transistor (20) and than the first electrode (26) of the first memory element (30)." Thus, the small width 13 of the bridge prevents heat dissipation.

It is thus respectfully submitted that of all grounds of rejection under 35 U.S.C. §112, second paragraph are overcome. Reconsideration and withdrawal of this ground of rejection are respectfully requested.

35 U.S.C. §102(e):

Applicants respectfully submit that none of the instant claims are anticipated by Chang. Chang discloses a device that uses via holes (please see Abstract) for programming that are then filled with tungsten (Chang, column 4, line 66 to column 5, line 15).

In contrast to prior art devices such as Chang, and that disclosed by Applicants in the specification at page 1, line 15 to page 2, line 3, the presently claimed invention (recited by instant claim 1) recites that “the organic material is programmed by heating the memory element to a transition temperature that reduces conduction through predetermined portions thereof” (please also see specification, page 2, lines 20-27, and 34). Such programmed structure is patentably distinguishable from mechanical tapped via holes of the prior art.

For all the foregoing reasons, it is respectfully submitted that none of the present claims are anticipated by Chang as this reference fails to disclose all of the elements recited by Applicants' claims. Nor would a person of ordinary skill in the art have found any of Applicants' claims obvious in view of Chang. Reconsideration and withdrawal of this ground of rejection are respectfully requested.

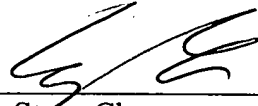
For all the foregoing reasons, it is respectfully submitted that all grounds of objection and rejection have been overcome. A Notice of Allowance is respectfully requested.

Should the Examiner deem that there are any issues that would be best resolved by a telephonic communication, please contact Applicants' representative at the telephone number listed herein below.

Respectfully submitted,

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Date: November 14, 2002


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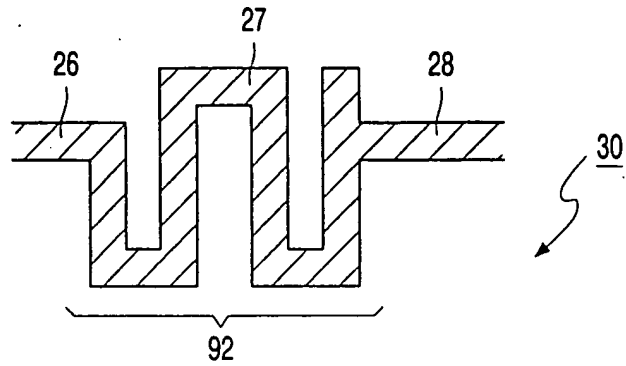


FIG. 4b

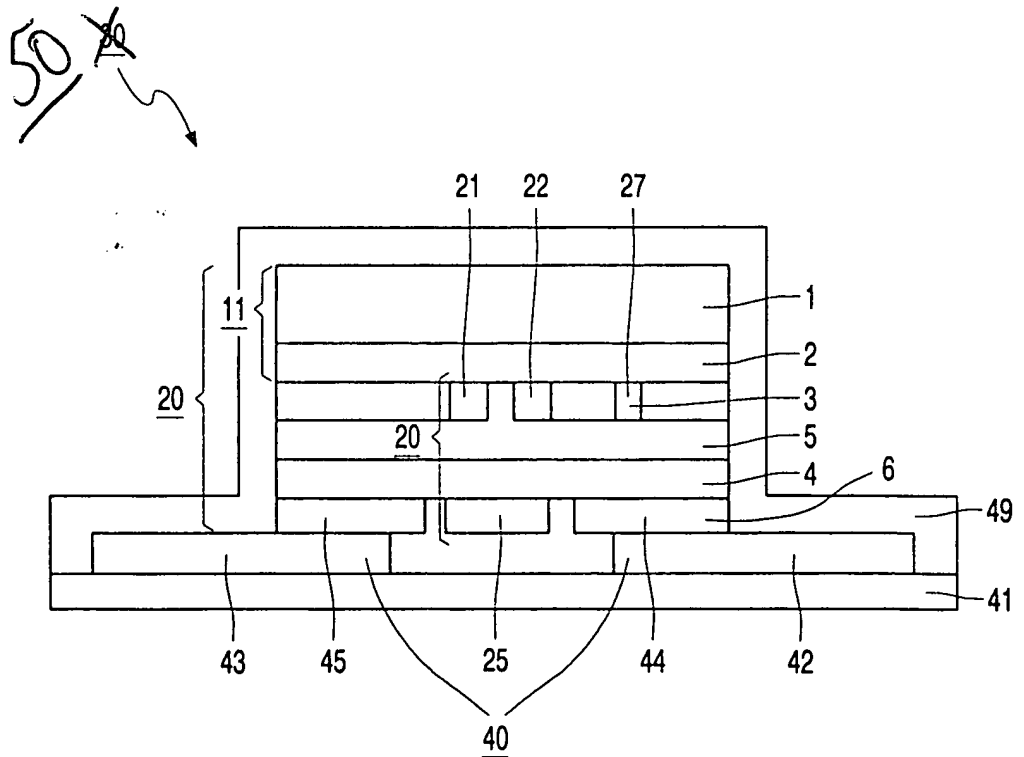


FIG. 5



Fig. 6A

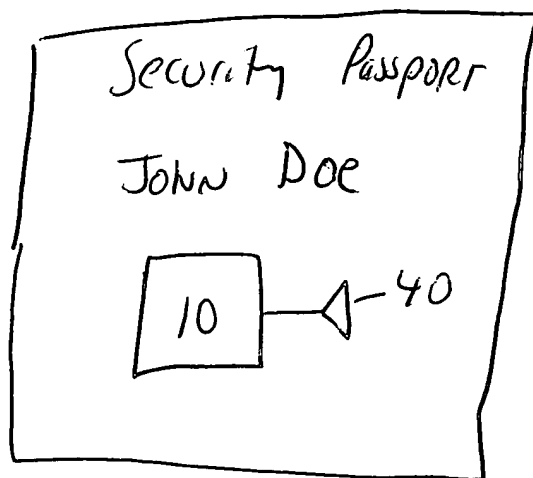
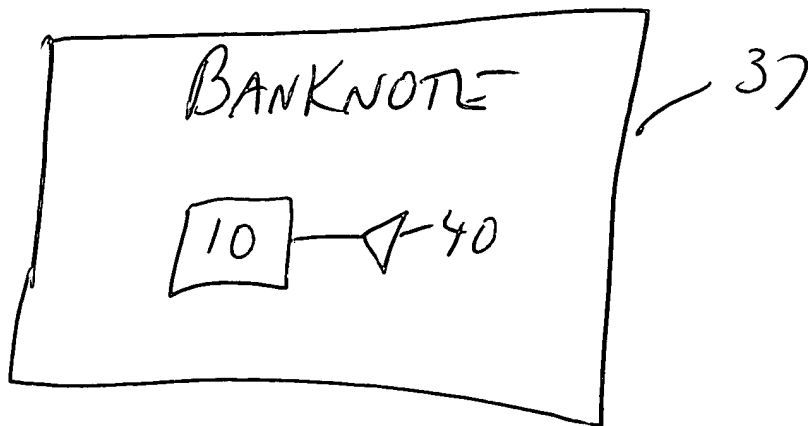


Fig. 6B



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Dagobert M. De LEEUW et al.
SERIAL NO.: 09/817,107 EXAMINER: Kiesha L. Rose
FILED: March 26, 2001 ART UNIT: 2822
FOR: INTEGRATED CIRCUIT PROVIDED WITH A SUBSTRATE
AND WITH A MEMORY, TRANSPONDER, AND METHOD
OF PROGRAMMING A MEMORY

VERSION WITH MARKINGS

Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

In response to the Office Action mailed August 14, 2002, please amend the
above-identified application as follows:

IN THE SPECIFICATION:

Please replace the paragraph at page 7, lines 14-23 with the following paragraph:

--The third object of the invention is achieved in that the integrated circuit [as
claimed in Claim 1] is present. This renders the security paper 37, as shown in Figs. 6A
and 6B [according to the invention] to be electrically programmable. Security paper
includes banknotes, paper meant for passports, entry tickets and other official documents
and the like. In the context of the application, paper is understood to mean paper which
is made from natural or synthetic fibers, as well as "paper" which can nowadays be
produced from plastic film. Preferably, the integrated circuit comprises an organic

semiconductor, as disclosed in WO-A 99154842. The security paper may further contain other security features, such as watermarks, security threads, hologram and the like. Signals and power may be received in a contactless manner through the antenna from a base station.—

Please add the following paragraph at page 8, line13:

--Fig. 6A illustrates security paper as a banknote including an integrated circuit according to the present invention.

Fig. 6B shows another example of security paper having an integrated circuit according to the present invention.--

IN THE DRAWINGS:

A proposed drawing correction for Fig, 5, marked in red ink, is submitted herewith for approval, as required by the Office Action. In addition, as required by the Office Action to illustrate an element recited in claim 11, New Figs, 6A and 6B illustrate the security paper recited by claim 11 that is also disclosed in the specification at least at page 7, lines 14-23. No new matter has been added.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) An integrated circuit (10) provided with a substrate (11) and with a memory having a first heat-programmable memory element(30), which memory element (30) comprises:

an electrically conducting organic material [, has] having a non-programmed and a programmed state, wherein the organic material is programmed by heating the

[organic material] memory element to a transition temperature that reduces conduction through predetermined portions thereof; [and comprises]

a first electrode (26) and a second electrode (28), [characterized in that]

wherein the first (26) and the second electrode (28) are interconnected in the non-programmed state by an electrically conducting bridge (27) which comprises the organic material,

said bridge (27) is at least partly interrupted in the programmed state so that conduction therein is reduced from when said bridge was in the non-programmed state [, and the first memory element (30) is programmable through heating of the organic material].

3. (Amended) An integrated circuit (10) as claimed in claim 1, [characterized in that] further comprising an electrical conductor track (23) [is present] being arranged therein for limiting heat dissipation from the bridge, perpendicular projections of said conductor track (23) and of the bridge (27) on the substrate (11) overlapping each other.

8. (Amended) An integrated circuit (10) as claimed in claim 7, characterized in that the bridge (27) is adapted to function as a conductor track that limits heat dissipation by having a smaller width (13) than the first transistor electrode (21) of the first transistor (20) and than the first electrode (26) of the first memory element (30) .